THE · EXTENSION PATHOLOGIST

A NEWS LETTER FOR EXTENSION WORKERS INTERESTED IN PLANT DISEASE CONTROL

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WARTIME RESPONSIBILITIES

Excerpts from a communication of February 11, 1942, by the Secretary of Agriculture, Claude R. Wickard

"The Extension Service has a vital responsibility in helping American farmers meet their obligations as producers and as citizens in the war for freedom.

"I am looking to the Extension Service to carry forward on every sector of the farm front the general educational work in agriculture and home economics essential to the success of our wartime job.

"The Extension Service is recognized as the responsible subject-matter agency that taps the scientific and economic information of this Department and of the State Experiment Stations and uses this information in a practical way in guiding farm people in all phases of farming and homemaking in the most comprehensive sense.

"We are producing more than ever before and our goals for 1943 must be larger, while still holding down our production of a few basic commodities. Practically every farmer, as he plans to increase production of milk, eggs, soybeans, peanuts or other things, needs technical information on how he can attain the goals on his farm. ... Here Extension must be on the firing line to furnish technical guidance with accuracy and dispatch.

"Shortages of fertilizer, machinery, processing equipment of all kinds, and other things present special problems in practically every area. Farmers and Extension workers together will have to use all the ingenuity at their command to reach the goals despite handicaps. For example, we know that tobacco cloth will be short this year, and yet we need an expansion in certain types of tobacco. It is too late to ration cloth. Consequently, the best means of meeting the situation seems to be to help farmers control blue mold, thus maturing more plants despite the shortage of cloth. ... Extension is expected to do whatever needs to be done to meet this sort of problem when it arises."

The EXTENSION PATHOLOGIST is issued at intervals by the Extension Service and the Bureau of Plant Industry.

PLANT PATHOLOGISTS MOBILIZE FOR EMERGENCY WORK

Realizing the need for special efforts to protect America's vital growing crops from plant disease losses during and after the war emergency, and the importance of preventing wastage and deterioration of harvested products in storage and in transit, the American Phytopathological Society at its annual meeting at Dallas, Tex., organized for war work. A War Emergency Committee was set up which includes representatives from the New England, Middle Atlantic, Southern, Upper Mississippi Valley, and Western Regions, Canada, and the U. S. Department of Agriculture. Representation of research, extension, regulatory work, and industry is provided for.

The general objectives for war service have to do with such matters as (1) summarizing and codifying information on known control measures and on preservation of food and other products, and making such summaries available in easily comprehensible form; (2) initiating and coordinating emergency experimentation; (3) scrutinizing present research projects in view of the present situation; (4) strengthening and intensifying research, extension, regulatory, and survey work.

The work will be promoted by regional committees, special committees, and by a central over-all committee the executive members of which are Dr. E. C. Stakman of Minnesota, Dr. J. G. Leach, West Virginia, Dr. R. P. White, Washington, D. C., and Dr. L. M. Hutchins (ex officio) of the U. S. Department of Agriculture.

The Middle Atlantic Region held its organization meeting at Harrisburg, Pa., March 3, and chose R. S. Kirby, State College, Pa., chairman, H. W. Thurston, State College, Pa., secretary. A single contact man was selected for each State, and also one man for each important crop or crop group to serve the region with respect to that crop. The crop leaders will collect, develop, and distribute information on diseases of their crops.

The Southern Region at Dallas selected as chairman G. M. Armstrong, of Clemson College, Clemson, S. C.

THE NEW ENGLAND PROGRAM

On February 9 a business meeting of the New England Division of the American Phytopathological Society was held in Providence, R. I., with five States represented, to decide upon a program for this region. Dr. James G. Horsfall, New Haven, Conn., was chosen to represent the Division on the War Emergency Committee of the parent society. Proposed activities were discussed, and a subcommittee consisting of one pathologist from each of the New England States was appointed to regulate the coordinated activities, which include:

1. Exchange information periodically on the occurrence of important plant diseases in New England.

2. Conduct basic research on the effectiveness and safety of promising new organic fungicides on fruits, vegetables, and ornamentals.

3. Try out substitutes for copper and mercury sprays and disinfectants, including alternate materials for potato seed treatment and safe materials for tender varieties, such as Chippewa, Earlaine, and Katahdin.

4. Carry on cooperative tests of promising disease-resistant varieties of fruits and vegetables.

5. Conduct standard vs. light dosage tests of spray fungicides, including sulfur on apples and copper on potatoes.

6. Survey the States for their yearly requirements of standard fungicides.

7. Assemble and disseminate the most recent revisions of disease control recommendations for New England.

8. Consider means of conserving fungicides that are on the scarcity lists, and extend the information to growers as the occasions arise.

9. Keep ourselves and the growers informed on the availability status of spray materials and disinfectants that occur on Federal priority lists or that are otherwise affected by the present emergency.

10. Emphasize to the growers the importance of obtaining maximum yields and high quality in food production in the present emergency and the necessity for efficient disease-control programs to accomplish this end.

--Communicated by O. C. Boyd,
Plant Pathologist, Amherst, Mass.

UPPER MISSISSIPPI VALLEY STATES JOIN IN RECOMMENDATIONS ON DISEASE CONTROL

The Upper Mississippi Valley War Service Committee, I. E. Melhus, Ames, Iowa, chairman, has recently issued two very useful subcommittee reports. Report No. 1 deals with cereal and flax-disease control measures; Report No. 2, with vegetable-disease control. These reports bring together the best and most up-to-date control recommendations for these crops applicable to the Upper Mississippi Valley States and Canadian Provinces to the north. They should be very helpful to those engaged in extension work in crop production.

The report of the subcommittee on cereal and flax-disease control measures is in three parts. Part I was prepared by L. E. Melchers

(chairman) of Kansas and staff members. Although the recommendations are made for Kansas, they are applicable to Nebraska, Missouri, Oklahoma, Texas, and New Mexico. Part II was prepared by H. C. Murphy of Iowa and staff members, and recommendations are applicable to Iowa, Illinois, Indiana, Ohio, and South Dakota. Part III was prepared by J. J. Christensen of Minnesota and staff members, and applies to Minnesota, North Dakota, Michigan, Saskatchewan, Manitoba, and Alberta.

Work with and through the State Crop Improvement Associations is emphasized in this report. Specific recommendations for the control of each important disease of cereals and flax are given.

The report on Vegetable Disease Control starts out with seed treatment and spraying and dusting schedules for the various vegetable crops. It then gives the control recommendations for each of the following crops: Asparagus, bean (snap and dry), bean (lima), beet (red), beet (sugar), cabbage and cauliflower, carrot, celery, eggplant, horseradish, lettuce, onion, pea, pepper, potato, tomato, vine crops (cucumber, melons, squash, pumpkin), and spinach.

The subcommittee making the report is as follows: I. E. Melhus, Ames, Iowa; Ray Nelson, East Lansing, Mich.; R. W. Sampson, La Fayette, Ind.; H. H. Thornberry, Urbana, Ill.; J. D. Wilson, Wooster, Ohio; J. C. Walker (chairman), Madison, Wis.

MEETING THE FUNGICIDE SHORTAGE

The U. S. Department of Agriculture through its Office of Agricultural Defense Relations has been performing a useful service by looking out for agriculture's need of spray materials and seed disinfectants. Efforts have been successful in obtaining a recognition of the importance of fungicides in food production and in insuring a reasonable supply of materials for producing this year's crop.

As time goes on, supplies of most of these chemicals will probably be more limited and it will become increasingly necessary to bring about savings in all possible ways as well as to devise other means of meeting the situation.

With this in mind, attention is called to the bulletin from Connecticut by Neely Turner and James G. Horsfall on meeting the spray material shortage (Conn. Expt. Sta. Bul. 455, March 1942). The authors point out that "stretching" supplies of materials commonly used is the best way to meet the shortage at the present time. On account of diversion of so much machinery, facilities, labor, and other commodities to direct war effort, it may not be easy to establish new manufacturing of substitute or alternative materials.

Suggested ways to make supply go farther are:

1. Accurate diagnosis of trouble.
2. Selection of the most important crops for treatment.

3. Elimination of unnecessary treatments.
4. Improved coverage.
5. Improved timing of applications.
6. Dosage reduction.

The last named suggestion, dosage reduction, can perhaps bring about the greatest saving. According to the authors, the amounts of common materials used in the past can be reduced by half without sacrificing very much in control.

The use of substitute or alternate materials offers promise for the future. There are many newer compounds, containing readily available elements that look interesting.

The War Emergency Committee of the American Phytopathological Society has set up a subcommittee on fungicides, with Dr. J. G. Horsfall as chairman, that will work out a coordinated research program for investigation of these substitute materials.

Plant pathologists will need to use their best combined judgment in revising control recommendations to help meet any fungicide shortages that may develop.

QUOTAS ESTABLISHED FOR SPRAYING AND DUSTING MACHINES

Under provisions of Limitation Order L-26 of the War Production Board quotas for the production of sprayers, dusters, and other farm machinery, equipment and parts have been assigned manufacturers for the period November 1, 1941, to October 31, 1942. They are expressed as percentages of each manufacturer's products for the 1940 calendar year. Group 12 of Schecule A is as follows:

		Quota (Percent)
Division 1:	Sprayers.	
Item 1.	Power sprayers (not including engine)	97
2.	Traction sprayers	85
3.	Hand sprayers (with tank, barrel, knapsack, etc.) capacity less than 6 gal.	100
Type 1.	Compressed air	
2.	Knapsack, self-contained	
3.	Trombone pump type	
4.	Bucket pump type single cylinder	
5.	Bucket pump type double cylinder	
6.	Atomizing single action	
7.	Atomizing continuous	
4.	Sprayers with tank, barrel, knapsack, etc., capacity 6 gal. or more w/cpt equipment	98
Type 1.	Barrel pump w/cpt equipment	
2.	Sprayers, wheelbarrow w/cpt equipment	
Division 2:	Spray pumps, power.	
Item 1.	Spray pumps, power	96

		Quota (Percent)
Division 3:	Attachments and parts.	
Item 1.	Attachments and parts for all "Items" in Divisions 1 and 2 of group 12 expressed in terms of total weight of all metals and rubber	140
Division 4:	Dusters.	
Item 1.	Dusters.	
Type 1.	Power	103
2.	Traction	94
3.	Dusters (hand)	100
Division 5:	Attachments and parts.	
Item 1.	Attachments and parts for all items in Division 4 of group 12 expressed in terms of total weight of all metals and rubber	140

CONFERENCE FORMULATES RECOMMENDATIONS ON CONTROL OF WILT DISEASES

On November 5 in a letter sent by C. D. Sherbakoff, of the Tennessee Agricultural Experiment Station, to 14 plant pathologists of the Southeastern States, inquiry was made as to whether it would be advisable to call a conference on fusarium and verticillium wilts of crop plants. Twelve replies were received, and all favored the proposal. Hence, a conference was called for December 29, 1941, at Dallas, Tex. C. H. Arndt served as acting chairman and H. T. Cook as acting secretary. About 40 members of the Phytopathological Society took part in the conference.

In line with H. P. Barss' reminder that the Nation is at war and that all our efforts should therefore be devoted first to the increased production of food, forage, and fiber crops, the conference agreed to devote its attention primarily to codification of recommendations for control of Fusarium wilt of the four major crops affected -- sweetpotato, cotton, tomato, and watermelon.

From the beginning it was recognized that whatever measures are agreed on, the value of the recommendations will depend almost entirely upon the availability of adequate service from extension plant pathologists. Therefore, the first resolution adopted by the conference was as follows:

"Since the proper application of plant-disease control is indispensable for effective increase in production of food, forage, and fiber crops; since our experience shows that a proper application of the measures of plant-disease control by the growers cannot be expected without professional guidance; and since at present there are many States which have no extension plant pathologist, be it resolved that in each State there should be at least one full-time extension plant pathologist."

The following resolutions were then passed in regard to Fusarium wilt control measures for the four crops:

1. For the control of sweetpotato stem rot: (1) Use disease-free "seed"; (2) use a clean plant bed; (3) plant potatoes in fields that are free from soil contamination.

2. For control of cotton Fusarium wilt: (1) Use wilt-resistant varieties where locally acceptable ones are available; (2) use complete fertilizers with enough potash to prevent potash hunger (so-called "rust").

3. For control of tomato Fusarium wilt: (1) Use disease-free plants, produced in a clean plant bed; (2) use disease-resistant varieties adapted to the particular region; (3) practice crop rotation; (4) avoid soil infested with root-knot nematode.

4. For control of watermelon Fusarium wilt: (1) Use wilt-resistant varieties where acceptable ones are available, if the crop is to be planted in infected soil; (2) if susceptible varieties are to be grown, practice at least an 8-year crop rotation for heavy soils (no rotation is practicable on the light, sandy soils which previously have shown severe wilt).

General recommendations for Fusarium wilt control: (1) In all cases when transplants are to be used, be sure that they are grown from disease-free seed and in a clean plant bed; (2) use disease-resistant varieties when feasible; (3) avoid planting crops susceptible to the wilt whenever it is practicable to do so; (4) rotate susceptible and resistant crops.

After the adoption of the above resolutions, the conference briefly considered the desirability of continuing the discussion of this subject at the meeting of the Southern Agricultural Workers at Memphis, February 4 to 6, 1942. Since the Cotton Disease Council would meet in conjunction with the Southern Workers, and since therefore a large number of southern plant pathologists would be expected there, it was agreed that the conference should continue its work at that time, primarily for the purpose of adopting a definite organization, and designating cooperative studies that might shortly be initiated. Studies of soil effect upon the wilts and host relationships, including common weeds, had been suggested for such studies.

--H. T. Cook, Acting Secretary.

TOBACCO BLUE-MOLD CONTROL MORE NECESSARY THAN EVER

Faced with a reduced supply of cotton cloth for covering their plant beds and with a call for 10 percent more acreage, flue-cured tobacco growers will need to guard against blue-mold losses more than ever.

When blue mold struck in 1932, growers were confronted with a new problem--the problem of growing enough good plants to set out their acreage,

on time if possible. They met it by greatly increasing their plant-bed areas. This was expensive but, in spite of the development and introduction of the less costly and more effective spray and P.D.B. gas methods of control, the majority have continued to plant more beds.

This year a definite shortage of cotton cloth developed that will probably continue for the duration of the war. The machines that normally weave tobacco cloth are needed to manufacture surgical supplies and other kinds of cloth for the Army and Navy.

By using old cloth and sometimes paying high prices for new, most growers apparently are making out this year. Those that have not been able to plant their normal yardage of covered beds, however, are the ones that are running the most risk of mold losses and will have the most to gain from the use of spray or gas protective measures.

State extension specialists, cooperating with the Bureau of Plant Industry tobacco specialists, have been putting on an intensive drive to inform growers regarding the best blue-mold control practices.

A CANADIAN'S VIEWPOINT OF THE POTATO BACTERIAL RING-ROT SITUATION IN THE UNITED STATES

Between January 1 and June 30, 1941, John Tucker, chief inspector in charge of Canada's seed-potato certification program, visited nearly 100 potato growing and marketing centers in 35 States. This gave him an opportunity to get a very good picture of our seed-potato industry. His observations on bacterial ring rot, summarized in the American Potato Journal for January 1942 are of interest:

> "There is no doubt about bacterial ring rot having spread far and wide throughout the country during the past few years, and that all concerned are taking more interest in the situation. One encouraging feature, it is agreed, is that where diseased stocks are completely disposed of, proper sanitary measures taken, and new disease-free seed planted, all chances are in favor of complete control on that property. Another is seen in the extraordinary measures taken by some prominent growers and officials to keep the disease out of their seed stocks. In some cases smears are taken from every tuber intended for seed plots or are examined under an ultra violet light before indexing. The tubers are distributed to selected farms to grow in units by tuber lines for multiplication. The seed produced in this way may form the nucleus for foundation seed produced in various distant parts of the country."

DIPPING SWEETPOTATOES IN BORAX LESSENS SOFT ROT

In an attempt to cut down severe losses of sweetpotatoes from soft rot during the marketing period, R. H. Gaines of the New Jersey Agricultural Experiment Station has discovered that dipping the potatoes in a

borax solution on removal from storage is quite effective. In his tests last year he dipped potatoes at the time they were being packed for marketing and then held them 10 to 11 days at 60° F. The borax treatment cut down the amount of soft rot that developed to 0.44 percent, whereas the untreated check developed 50 percent.

The treatment is briefly as follows: Remove potatoes from storage, brush and dip in a solution of 20 pounds of borax to 100 gallons of water plus emulsified summer spray oil to make oil content 1.75 percent.

SEED TREATMENT OF LONG-STAPLE COTTON VARIETIES URGED

Every effort is being made this year to stimulate production of more long-staple cotton which is needed for the manufacture of balloon and parachute cloth, aircraft coverings and other strategic materials. The amount of available seed is limited and so its economical use, including seed treatment to help insure stands, and germination tests to determine best planting rates, is urged.

COTTONSEED TREATMENT

For treating cottonseed this year, D. C. Neal in Louisiana recommends 1½ ounces of New Improved Ceresan or 2 ounces of Spergon for each bushel (32 lb.) of fuzzy, regular ginned seed. For delinted seed, however, he suggests that the New Improved Ceresan be reduced to 1 ounce or the Spergon to 1½ ounces for each 32 pounds of seed.

SPERGON AS A SEED DISINFECTANT

Attention is called to two articles in The Plant Disease Reporter (Vol. 26, February 1, and Vol. 26, March 1, 1942) on the use of Spergon as a seed disinfectant. With the outlook for fungicides containing strategic metals and chemicals none too promising, it may be necessary to find suitable substitutes.

In the first of these articles O. H. Elmer, reporting on 1 year's work, found that Spergon diluted at the rate of 2 ounces per gallon of water is a satisfactory momentary dip for sweetpotato seed and sprouts. In the second article, R. W. Leukel reported control of covered kernel smut of kafir and improved emergence of kafir and feterita by the use of this same disinfectant applied to the seed as a dust at the rate of 3 ounces a bushel.

NEW TREATMENT REMOVES SCURF FROM POTATOES

In the course of an investigation of disinfectants to put in wash water for preparing potatoes for market, W. E. Brentzel of the North Dakota Agricultural Experiment Station, has found that chloride of lime will remove "the dirt that won't wash off"; that is, scurf, the winter stage of

the fungus Rhizoctonia. In addition, it improved the appearance and color of the tubers. The treatment consists of a soak in a 5- to 10-percent chlorinated lime solution to which a suitable wetting agent has been added.

CERTIFIED SEED POTATO CROP APPROACHES RECORD

A reported 1941 production of 17,524,723 bushels of certified seed potatoes was second only to the record crop in 1940 of 18,731,452 bushels and far above the 10-year (1930-39) average of 10,475,200 bushels. Production in 14 States was larger than in 1940, and smaller in 15 States. Leading States with increases are South Dakota, New York, Pennsylvania, Minnesota, Vermont, Nebraska, Washington, and North Dakota.

The old stand-by, Cobbler, continued to lead all varieties, representing 25.9 percent of the 1941 certified seed potato crop. Triumph variety, with 21.7 percent, was second. Others and the percentage of the total crop are: Green Mountain, 15.8; Katahdin, 12.0; White Rose, 4.7; Netted Gem, 4.0; Chippewa, 3.7; Russet Rural, 2.5; Early Ohio, 1.7; Rural New Yorker, 0.6; Burbank, 0.5; Russet Burbank, 0.4; Spaulding Rose, 0.1; all others, 6.4.

Prices to growers on December 1 averaged 93 cents a bushel, compared with 69 cents for the same date in 1940, 99 cents in 1939, 85 cents in 1938, and 63 cents in 1937. Growers sold about 18 percent of the total crop before December 1, compared with 20 percent last year.

-- U. S. D. A. Information for the Press, December 31, 1941.

BRITISH TOMATO RULING

A new order relating to commercial greenhouses in Britain stipulates that all glass houses used for producing crops for sale must be wholly devoted to tomatoes for at least 6 months of the year, except they be planted to permanent crops. The latter, however, must be reduced to 25 percent prewar plantings. Presumably carnations and roses grown in beds or benches are classed as permanent crops. The use of greenhouses, frames, and cloches for the production of tulip flowers again is prohibited.

--Market Growers Journal, February 1.

THE TOMATO PLANT BED

Young tomato plants are subject to so many diseases that the closest possible adherence to recommendations is required to procure a crop of healthy seedlings.

The extension specialist who is interested in the control of vegetable diseases last spring visited plant growers in a large number of counties. All these men produced nearly 30 million tomato plants for canners and gardeners. The most interesting part was that in nearly all the greenhouses, hotbeds, and coldframes the plants were perfectly healthy. One man

even offered to eat every damped-off plant that could be found among the 3 million he was growing.

But there still were a few plant growers who failed to keep out damping-off, wire-stem, and foot-rot. This unfortunate result was due wholly to their failure to follow certain required practices, such as the following four:

1. Have the seed hot-water treated (122° F. for 25 minutes), then immediately soaked for an hour in a blue vitriol solution (2 ounces dissolved in 1 gallon of water). The seed then is dried.

2. Spray the young plants every 5 to 7 days with one of the insoluble copper compounds. One to two pounds of metallic copper is required for each 100 gallons of spray. The spray should be applied so that it will cover the leaves, stems, and soil. The miniature power sprayers now on the market are ideal for this purpose.

3. Destroy all weeds in the vicinity of the plant bed. If there is a grass sod, keep it mowed with a lawn mower. This zone of safety should be at least 200 or 300 feet in width. Weeds and, in some cases, flowers, may contain the mosaic virus.

4. Do not use any form of tobacco when working with tomato plants. K. M. Smith of England again has shown that the mosaic virus can be recovered from nearly all forms of smoking and chewing tobacco. Washing with soapsuds will remove the virus from a smoker's hands.

None of these four points are difficult to follow, and will repay the grower not only in healthy plants but also in that satisfied feeling one has when a difficult job has been well done.

--Charles Chupp, Extension Plant Pathologist, New York.

WHEEL SHIELDS FOR SPRAY RIGS

Of particular value to tomato growers who expect to spray or dust their fields is a report of R. S. Samson and John D. Hartman of Purdue University, in which they show that by the proper use of well-designed wheel shields, growers can prevent considerable damage to the tomato foliage by the wheels, and yet give the crop the necessary dusts or sprays. These men conducted their experiments in a field of tomatoes in which the rows were only 3½ feet apart, a distance often considered rather close where much dusting or spraying with heavy machinery is done.

--Market Growers Journal, February

CALIFORNIA CURBS MOSAIC, ROOT ROT OF BEANS

Mosaic and root rot of beans, two serious diseases of Pink and Small White varieties especially, are now being curbed successfully in the Salinas Valley as a result of cooperation between growers and the California College of Agriculture.

Since bean mosaic is carried over from season to season in the seed, steps were first taken to insure an adequate supply of disease-free seed in 1940, and growers are now able to produce a continuous supply of such seed.

Since development of root rot is influenced by soil temperatures at planting time, growers were then provided with soil thermometers which enabled them to plant according to soil temperatures rather than the calendar. This greatly reduced injury by root rot during the critical early stages of bean growth. When combined with planting of winter cover crops to be turned under before beans were planted, it has proved an efficient means of curbing root rot.

--University of California Clip Sheet.

FARM BUREAU NEWS CLIPPINGS

A Russian Recipe for Controlling Storage Rots. Even though Russia is having an all-out war with Germany, the terrible struggle is not destroying the work of its plant pathologists. They were interested in controlling cabbage and carrot storage rots caused by the molds Sclerotinia and Botrytis. They dusted the cabbage heads and the carrot roots with finely divided chalk dust, using 2 percent of the material by weight. The storage house was kept near 32° F. and 96 percent humidity. According to these Russian authorities, first-grade cabbage after storage was 82 percent as compared with 68 percent where no chalk was used, and the treated carrots were retained in almost perfect condition during a storage of 227 days.

The Enemy Bombards Our Vegetables. Those who attended Farmers' Week at Ithaca in February had an opportunity to see how far fungi shoot their spores. They could even hear the bombardment against the paper membranes. Ordinarily it is difficult for the grower to visualize the force with which these microscopic bodies are shot out of their fruiting bodies. But with such a demonstration it can readily be seen why even small amounts of diseased refuse containing parasitic fungi, and left in the field, may be great sources of danger for succeeding crops. The spores, which correspond to seeds in higher plants, are shot into moist air, and by wind currents may be carried long distances.

Rotations of crops, eradication of weeds, plowing under diseased refuse, burning waste trash, and avoiding flooding from infested areas, destroy the sources from which spores are discharged and consequently protect the crops from these long-range bombardments. Since it is impossible to grow crops in bombproof shelters, it is desirable to keep the air free from such destructive enemies.

Seed-Borne Vegetable Diseases. When the mail comes safely through from Holland, their scientific journals indicate that in the little country by the sea the men and women who study plant diseases are as busy as ever in finding control methods. The amount of work they do is impressive, especially when the condition under which they live is considered.

Among the articles coming from there recently is one dealing with the various disease organisms carried on or in the vegetable seeds. Dr. Doyer, the investigator, includes in his discussion beans, beets, cabbage, carrots, celery, lettuce, onions, parsley, peas, radish, salsify, spinach. He shows that one of the most common methods by which a disease-producing bacterium or fungus gets into a vegetable field is by way of the infested or infected seed.

The obvious means of control, then, is to procure healthy seed or to practice seed treatment.

The methods which Dr. Doyer recommends in a previous book for Holland conditions do not always apply in America. But the growers here are furnished with a mimeographed seed chart which gives the materials to use, the method of application, and the diseases which are affected. A little later in the winter, this chart will be available at your county agricultural agent's office, a copy of which can be procured for the asking.

Seed treatment should always be accompanied by crop rotation. On any vegetable farm where these two recommendations are practiced consistently, crop losses are much reduced or in some cases wholly eliminated.

--Charles Chupp, extension plant pathologist, New York.

RESISTANT VARIETIES

Vicland, a new oat variety which is highly resistant to both smuts and rusts, has been outstanding in yield and quality in experiments in Wisconsin. Distributed in that State for the first time last year the variety has been increased so that 228,000 bushels are available for seeding this spring. This is enough for about 4 percent of the more than 2,400,000 acres set for Wisconsin's 1942 goal.

Other new superior smut-resistant spring oats recently distributed, and mentioned in the 1941 annual report of the Bureau of Plant Industry are: Huron in Michigan, Uton in Utah, Marida in northern Idaho, and Bridger in Montana.

Pan America, a new red, globe-shaped tomato that is practically immune to Fusarium wilt has been distributed to tomato seed growers for commercial increase. It was developed from a cross in 1936 between Marglobe and a wilt-resistant red currant tomato from Peru.

Umatilla Marblehead, a variety of squash resistant to curly top, has been released to northwestern seedsmen for commercial increase according to the 1941 annual report of the Chief, Bureau of Plant Industry.

PERSONNEL

Dr. M. B. Linn reported for duty as assistant professor of vegetable crops extension, Department of Horticulture, University of Illinois, March 7, 1942. His time will be devoted to extension work in vegetable-disease control. He comes to Illinois from New York State where he has been engaged in research and extension work with vegetable diseases since 1933.

H. W. Rankin, who was assistant extension plant pathologist in Pennsylvania, and a reserve captain, joined the active service January 31 and has been assigned to the Military Police Division. After taking a training course at the Provost Marshal General's School, Arlington Cantonment, Va., he was assigned to duty at Albany, N. Y.

O. S. Cannon, formerly of Cornell University, reported for duty at State College, Pa., March 1, to take Captain Rankin's place.

Huey I. Borders, extension plant pathologist in Georgia, a reserve officer, was called to military service in March 1941. Since that time he has been stationed at Fort Benning, Ga. During the Louisiana maneuvers he sustained a foot injury but is now back with his company again. Captain Borders' position is being kept open for him; so far, no one has been appointed to fill his place for the duration.

John R. Vaughn, recently appointed assistant extension plant pathologist in West Virginia, a reserve lieutenant, was called to active duty with the Army in January of this year. He started out with a training course at Fort Sill, Okla. Bailey Sleeth, formerly with the Division of Forest Pathology, Bureau of Plant Industry, is filling in as assistant extension plant pathologist for Lieutenant Vaughn while the latter is on leave of absence.

Dr. J. H. Standen, specialist in plant pathology with the Iowa Extension Service, has accepted a position at the University of Delaware where he will study new fungicide materials. E. L. Waldee takes Dr. Standen's place as extension plant pathologist at Ames, Iowa, effective May 1, 1942. Mr. Waldee has practically completed the requirements for his doctor's degree with the Department of Botany at Iowa State College. His investigational work has been with bacterial plant pathogens and potato diseases.

NOTICE

Exacting wartime economies make it necessary to discontinue publication of The Extension Pathologist. This will be the last issue for an indefinite period.
